



VN45350 SERIES

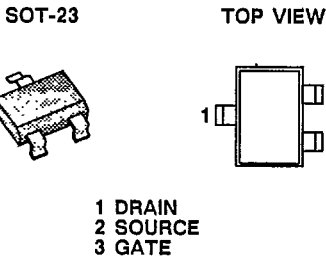
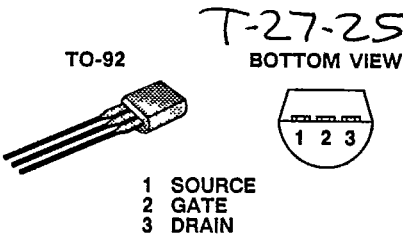
N-Channel Enhancement-Mode MOS Transistors

PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
VN45350L	450	350	0.030	TO-92
VN45350T	450	350	0.020	SOT-23

Performance Curves: VNDO50 (See Section 7)

PRODUCT MARKING	
VN45350T	V04



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	VN45350L	VN45350T	UNITS
Drain-Source Voltage		V _{DS}	450	450	V
Gate-Source Voltage		V _{GS}	±30	±30	
Continuous Drain Current	T _A = 25°C	I _D	0.030	0.020	A
	T _A = 100°C		0.019	0.013	
Pulsed Drain Current ¹		I _{DM}	0.12	0.08	
Power Dissipation	T _A = 25°C	P _D	0.80	0.35	W
	T _A = 100°C		0.32	0.14	
Operating Junction and Storage Temperature		T _J , T _{stg}	-55 to 150		°C
Lead Temperature (1/16" from case for 10 seconds)		T _L	300		

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THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VN45350L	VN45350T	UNITS
Junction-to-Ambient	R_{thJA}	156	350	$^{\circ}\text{C/W}$

¹Pulse width limited by maximum junction temperature

VN45350 SERIES

T-27-25



ELECTRICAL CHARACTERISTICS ¹			LIMITS			
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VN45350		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = 10 μA	490	450		V
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 10 μA	3.5	1.0	4.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±20 V	±1		±100	nA
		T _J = 125°C	±5		±500	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 250 V V _{GS} = 0 V	0.003		0.050	μA
		T _J = 125°C	2		5	
On-State Drain Current ³	I _{D(ON)}	V _{DS} = 15 V, V _{GS} = 10 V	30	15		mA
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = 10 V, I _D = 10 mA	320		350	Ω
		V _{GS} = 10 V	300			
		I _D = 5 mA	650		820	
		T _J = 125°C				
Forward Transconductance ³	g _{FS}	V _{DS} = 15 V, I _D = 10 mA	14	5		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = 10 V, I _D = 1 mA	4.5			μS
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = 0 V f = 1 MHz	5		20	pF
Output Capacitance	C _{oss}		1.8		10	
Reverse Transfer Capacitance	C _{rss}		0.5		5	
SWITCHING						
Turn-On Time	t _{d(ON)}	V _{DD} = 25 V, R _L = 2500 Ω I _D = 10 mA, V _{GEN} = 10 V R _G = 25 Ω	4.5		10	ns
	t _r		8		15	
Turn-Off Time	t _{d(OFF)}	(Switching time is essentially independent of operating temperature)	15		30	
	t _f		60		100	

- NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted.
 2. For design aid only, not subject to production testing.
 3. Pulse test; $PW = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.